

ABSTRACT OF THE DISCLOSURE

A memory cell array is constructed by two-  
dimensionally arranging a plurality of memory cells  
each composed of a magnetoresistive element, in a row  
5 and column directions. Write word lines are provided  
along the row direction of the memory cell array.  
Write bit lines are provided along the column direction  
of the memory cell array. To write data, a pulse-like  
write current is applied to an appropriate word and bit  
10 lines to generate magnetic fields in the column and row  
directions. A combined magnetic field of the magnetic  
fields in the column and row directions is applied to a  
memory cell to write data. A control circuit controls  
the pulse width of the pulse-like write current applied  
15 to the word and bit lines so that the pulse width has a  
predetermined temperature dependence.